## REMARKS

This amendment is in response to the Examiner's Office Action dated 3/1/2004, and further in view of the in-person interview of 9/21/2004 and the telephone interview of 9/22/2004. Applicant is appreciative of the professional and courteous interview held with the Examiner. This amendment should obviate outstanding issues and make the pending claims allowable. Reconsideration of this application is respectfully requested in view of the foregoing amendment and the remarks that follow.

## STATUS OF CLAIMS

Claims 1, 2, and 4-8 are pending.

Claim 3 was previously cancelled and has been withdrawn from consideration.

Claim 9 has been newly added.

Claims 1, 2 and 4-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Doughty (USP 4,551,581) in view of Tabu et al. (JP 62078941), and further in view of Dalal et al. (USP 6,115,469).

## OVERVIEW OF CLAIMED INVENTION

The present invention provides for an apparatus for sending a ringing signal to notify a called terminal of the presence of an incoming call addressed thereto, comprising a ringing voltage generating means, a data transfer means, feed impedance selection means, and feed impedance setting means. The ringing voltage generating means generates a ringing voltage and the ringing signal sending means sends out a ringing signal over a subscriber line by outputting the ringing voltage with a predetermined duty cycle of a ringing period and a silent

period. The data transfer means performs a data transfer to the called terminal over the subscriber line during one of the silent periods and the feed impedance selection means works in conjunction with one or more switches to select a low-impedance feed voltage in one of the silent periods during which the data transfer is performed, and selects a high-impedance feed voltage in the other silent periods during which no data transfer is performed. The feed impedance setting means provides the high-impedance feed voltage to the subscriber line when said feed impedance selection means selects feeding of the high-impedance feed voltage, wherein the high-impedance feed voltage is realized by inserting a predetermined resistance on the subscriber line in series with a subscriber line circuit (SLIC) that drives the subscriber line, while the low-impedance feed voltage is provided by removing the predetermined resistance from the subscriber line.

In the Claims

REJECTIONS UNDER 35 USC 103(a)

Claims 1, 2 and 4-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Doughty (USP 4,551,581) in view of Tabu et al. (JP 62078941), and further in view of Dalal et al. (USP 6,115,469). To be properly rejected under U.S.C. §103(a), each and every element of the claims must be addressed through known prior art or be recognized as an obvious variation thereof. Applicant contends that the combination of the Doughty, Tabu, and Dalal references fail to provide many of the limitations of applicant's pending claims.

With respect to the rejected claims 1, 2, and 4-8, Applicant agrees with the examiner that the Doughty reference fails to mention explicitly or implicitly a feed impedance selection means for selecting a low-impedance feed voltage for a silent period with data being transferred, and

selecting a high impedance feed during silent periods with no data being transferred. Applicant also agrees with the examiner that the Doughty reference fails to explicitly or implicitly mention a feed impedance setting means for providing the high impedance feed voltage to the subscriber line, wherein the high-impedance feed voltage is realized by inserting a predetermined resistance on the subscriber line, while the low impedance feed voltage is provided by removing the predetermined resistance from the subscriber line.

Applicant, however, disagrees with the examiner's statement that the Tabu and Dalal references teach the above limitations. Specifically, on pages 3-4 of the office action of 03/01/2004, the examiner states that "Tabu teaches a call signal transmission circuit with means for selecting a high or low voltage feed impedance voltage feed during the silent periods of the ringing cycle." The examiner cites the "OPERATION" section of the translation (of the Tabu reference) as providing support for such a limitation. Applicant contends (and as will be shown below), that the Tabu reference teaches otherwise.

The Tabu reference provides for a ringing tone sending-out circuit wherein a variable resistance element 15 (see figure 2 of Tabu) is inserted into a subscriber line to suppress impulse noise. The resistance value of element 15 is decreased gradually after the start of the transmission of a ***ringing signal*** and increased right before the stop in transmission of the ***ringing signal*** (see 'Purpose' section of the Tabu reference). The examiner is respectfully directed to the graphs shown in Figure 3 of the Tabu reference where signal 'r' represents the ringing signal and 'R' represents the variable resistance element. An excerpt from the translation is provided below:

"After the time point t1, the variable resistance element 15 keeps the low resistance value $R_L$ until time point t1, but increases as the output signal d decreases after time point t1, and reaches high resistance value $R_H$ by the time point t2, at which the out signal d is no longer input. As a result, the call signal r decreases as the resistance value R15 increases from the time point t1 to the time point t2 at which the contact recovers"

Hence, as evident in Tabu's Figure 3 and accompanying description, the resistance value of element 15 is increased (to $R_H$) or decreased (to $R_L$) only during the period of the ringing signal 'r'. There is no explicit or implicit mention in Tabu regarding the "silent periods" of ringing cycle (the period after a ringing signal). Applicant contends that since the Tabu reference fails to either explicitly or implicitly address "silent periods", it would be moot to claim that the Tabu reference explicitly mentions selecting "a high impedance voltage feed during the silent periods of the ringing cycle" (see pages 3-4 of the office action of 03/01/2004). Applicant also contends that it would not have been obvious to have modified the Tabu reference to provide for the limitation of selecting between a high or low impedance voltage feed during a silent period of a ringing cycle.

Furthermore, the examiner cites the 'Operation' section of the translated version of the Tabu reference as providing support for the limitation of selecting a high impedance voltage feed during the silent periods of the ringing cycle. A closer read of the citations teaches otherwise. The 'Operation' section of the Tabu reference teaches, "at the time the call signal transmission is stopping, the resistance of the variable resistor 100 changes from the low resistance to high resistance, so transient is reduced." As mentioned above, the Tabu reference fails to address the

silent period and, further, fails to teach or suggest the manipulation of an impedance value during the silent period (after the ringing signal).

The examiner also states that it would have been obvious to one or ordinary skill in the art to have modified the Doughty reference in view of the Dalal and Tabu references to provide for the selection of a high impedance feed voltage in the silent period when data transfer is performed and for the selection of a low impedance feed voltage in the silent period when data transfer is not performed.

The Doughty reference merely teaches sending a data message during a silent interval and fails to teach the selection of a high or low impedance value during the silent period. The Dalal reference merely teaches a ring generator circuit that provides both a ring signal and a talk battery to a subscriber telephone line. It should also be noted that in the Dalal reference, the subscriber line is on the secondary side of the transformer T1, where no switching devices are present. The circuit of Dalal is inherently unlikely to produce transitional noise as it uses no relays for switching the subscriber circuit and is thus free from switching noise. The Tabu reference, as per the graphs shown in figure 3, shows that the resistance value of 'R' settles on a constant value of $R_H$ after the ringing signal ends. Furthermore, according to the present invention, to create a high impedance feed condition, a predetermined resistance is inserted on the subscriber line in series with the subscriber line interface circuit (SLIC), as opposed to Tabu's circuit in which the variable resistance element (which changes only during the presence of a ringing signal 'r') is placed in series with the ringing tone generator.

Hence, it would be erroneous to suggest that the Doughty reference can be modified with the teachings of the Tabu reference to change the value of a resistance between a high and low impedance value during a silent period. Hence, applicant contends that the examiner has failed to make a *prima facie* case of obviousness with respect to claims 1, 2 and 4-8.

Applicant also contends that the Doughty reference, the Dalal reference, and the Tabu reference fail to teach a feed impedance selection means working in conjunction with one or more switches to select a low impedance feed voltage in the silent period during data transfer and to select a high impedance in the silent period during which data transfer is absent.

As has been detailed above, none of the references, cited or applied, provide for the specific claimed details of applicant's presently claimed invention, nor renders them obvious. It is believed that this case is in condition for allowance and reconsideration thereof and early issuance is respectfully requested.

As this amendment has been timely filed within the set period of response, no petition for extension of time or associated fee is required. However, the Commissioner is hereby authorized to charge any deficiencies in the fees provided to Deposit Account No. 50-1290.

If it is felt that an interview would expedite prosecution of this application, please do not hesitate to contact applicant's representative at the below number.

Respectfully submitted,

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